Development and Implementation of a Case-based Virtual Training Program for Oncologic Emergencies in Botswana

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Introduction

Oncology patients present unique medical challenges due to their disease and treatment complexities. Oncologic emergencies contribute to a large proportion of morbidity and mortality for oncology patients worldwide, who are at high risk for rapid clinical decline. Medical staff often do not receive specific oncologic training. Therefore, oncologic emergencies training is important, particularly if there is high staff turnover.

Purpose

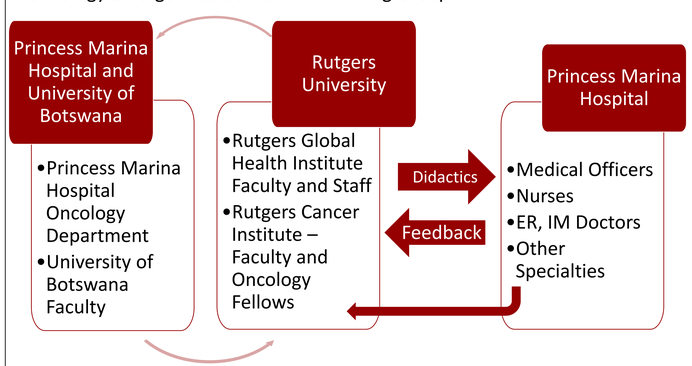
To develop and implement a program to enhance timely recognition and treatment of oncologic emergencies. Due to the COVID19 pandemic, sessions were conducted virtually with live video conferencing.

Methods

A curriculum based on various oncologic emergency topics was developed in a working group between Botswana and Rutgers faculty, fellows and staff to reflect specific management and resources available at Princess Marina Hospital (Figure 1). Target audience were healthcare workers who normally care for oncology patients at Princess Marina Hospital. The curriculum was launched in Fall 2020 as a series of regular case-based lectures. Participation was through live chat case reviews and pre- and post- session questions. After didactic sessions were given, feedback on content was elicited through Likert-scale surveys. After several sessions, Botswana staff in the audience were invited to participate in giving presentations to their peers, with guidance from the Oncology Emergencies curriculum working group.

Figure 1:

Oncology Emergencies Curriculum Working Group



Results

In total, 9 live sessions were held with different topics (Figure 2), given in regular intervals over several months. Each session followed roughly the same structure (Figure 3): Sessions started with pre-session teaching questions and a survey to assess underlying understanding, followed by cases specific to the topic (Figure 4) and an overview of practical knowledge in diagnosis and management for the topic discussed. Sessions concluded with post- session teaching questions, with immediate live feedback of responses.

Figure 2: Topics covered

Oncologic Emergencies Curriculum

1. Metabolic Emergencies
2. Neurologic Emergencies
3. Neutropenic Fever and Sepsis
4. Hemorrhage and Anemia
5. Hypoxia
6. Obstructive Complications Part 1: GI and Airway
7. Obstructive Complications Part 2: Urologic and Biliary
8. Chemotherapy Reactions
9. Cancer-related Pain

Figure 3: Structure of live sessions

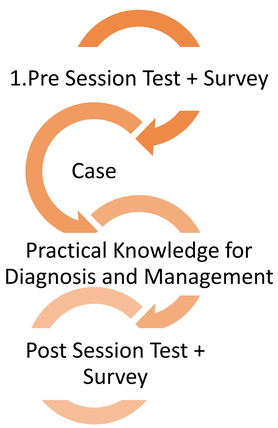
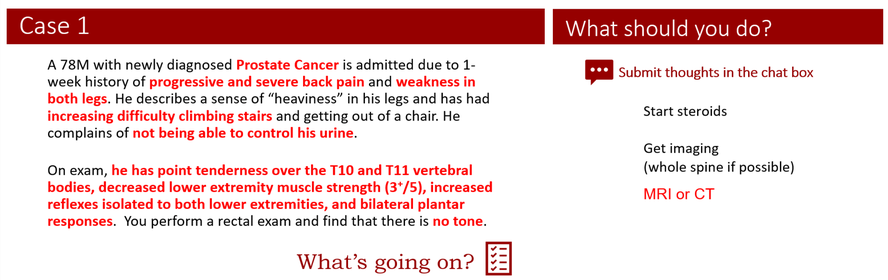
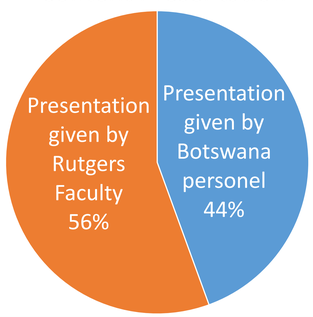


Figure 4: An example of how cases were presented and reviewed with our participants through live chat videoconferencing.



A little less than half of the sessions were given by Botswana staff, which provided mentorship and collaborative opportunities (Figure 5)

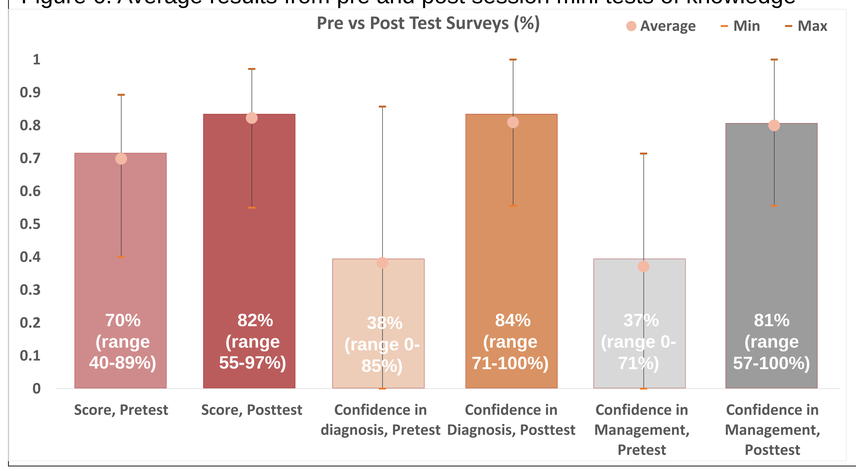
Figure 5: Breakdown of Content Presentation



Results, cont.

An average of 19 participants (range 13-29) attended the training sessions. Average makeup per session was: 32% nurses, 26% Medical Officers, 4% Internal Medicine Residents,16% Specialists, 21% other. Knowledge appeared to increase after sessions (Figure 6).

Figure 6: Average results from pre and post session mini tests of knowledge



Discussion

We describe the successful piloting of a case-based virtual training program in oncologic emergencies, adapted to local resources at Princess Marina Hospital, which to our knowledge is the first of its kind. The number of participants in our pilot was too small to make any statistically significant conclusions, but the pilot was well received and data suggests a benefit to the participants, as confidence in diagnosis, recognition and management of oncologic emergencies increased after sessions.

Future Plans

- Create materials that can be widely distributed for education of oncologic emergencies.
- Expand the series to more sites within the country, most of which do not have dedicated oncology trained staff
- Measure outcomes for oncology patients before and after implementation of the oncology emergencies curriculum

Acknowledgements

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